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Industrial waste water purification without the need for water treatment machinery and addition of chemicals

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NOVELTY

Industrial waste waters are purified by natural pretreatment with acidic organic sludge and then filtration through perforated filter elements of bio-concrete.

DETAILED DESCRIPTION

Industrial waste waters (9) are purified by:

(a) pumping (1) from a intermediate storage tank (2) to sludge-containing tanks (3) which are successively filled and emptied;

(b) pumping (1) into a tank (4) which has a filter wall (5) of bio-concrete blocks, steps (6) for oxygenation of the water and a reservoir (7) for collecting the water;

(c) pumping (1) either into a water stream (10) or into an intermediate storage tank (8) before being recycled to an industrial production unit; and

(d) periodically withdrawing the saturated acidic organic sludge from the decantation tanks (3) for supply to an evaporative drying unit (11), the resulting material being recycled for use in the production of construction materials or supplied to a sludge treatment works (12).

An INDEPENDENT CLAIM is also included for a bio-concrete filter wall (5) comprising finely perforated parallelepipedal bio-concrete blocks (80x40x20 cm) consisting of 100/100 cement, 100/100 river or quarry sand, 100/100 gravel, 100/100 calcite, 50/100 bauxite, 50/100 potassium nitrate, 100/100 feldspar, 100/100 fine pure sea-sand, 50/100 silicon, 30/100 carbonic acid, 20/100 caustic soda and 50 g quaternary ammonium per 1000 g concrete.

USE

For purification of industrial waste waters as well as less polluted canal, stream, pond, lake and precipitation waters.

ADVANTAGE

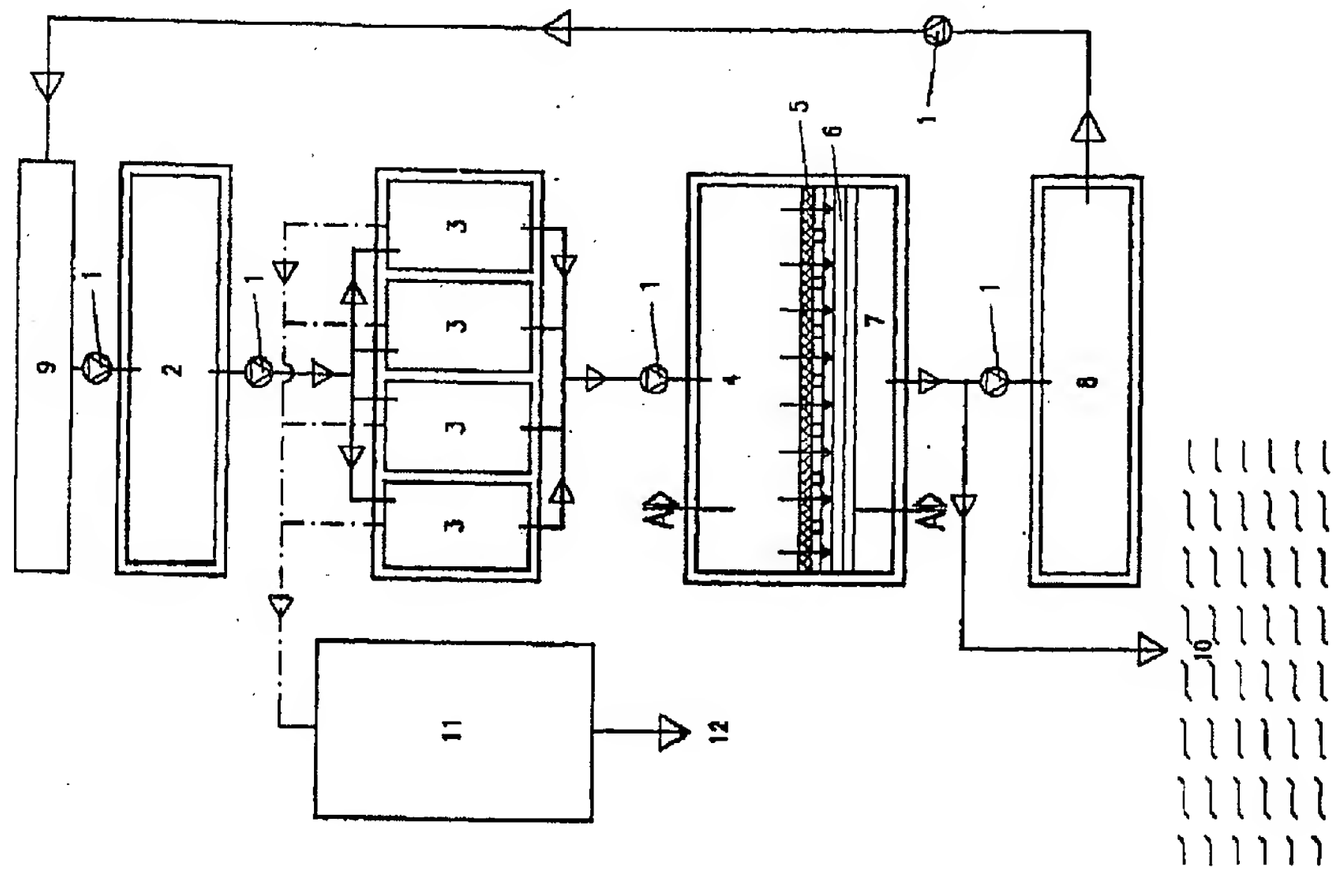
The process avoids the need for water treatment machinery and

addition of chemicals, has a low energy consumption and comprises an entirely natural treatment.

DESCRIPTION OF DRAWING

The drawing shows an installation for treating polluted water in accordance with the invention.

Pumps 1
Polluted water intermediate storage tank 2
Sludge pretreatment tanks 3
Gravity filtering tank 4
Bio-concrete filter wall 5
Stepped surface 6
Collection reservoir 7
Clean water intermediate storage tank 8



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